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Air Force notches successful joint review of basic science portfolios

by William J. Sharp, Air Force Office of Scientific Research

ARLINGTON, Va. — The Air Force Office of Scientific Research completed its annual Joint Program Review (JPR) of basic research funded projects Aug. 7-11 in Atlanta.

Hundreds of notable researchers and scientists from throughout the United States attended this year's program representing universities, the Air Force Research Laboratory, and the federal and private sectors.

"The JPR benefits the Air Force by providing an opportunity for cross-disciplinary communication and collaboration among members of the Air Force Research Laboratory family," said Dr. John D. Schmisseur, an AFOSR program manager and conference co-host. "At the conference, AFRL personnel receive updates on progress, accomplishments and breakthroughs concerning AFRL-funded research."

Air Force program managers also use the JPR to asses the overall strength of their basic research portfolios. In addition, the JPR nurtures opportunities for scientific peer reviews in an open forum and encourages collaborative solution development among the researchers – an important layer of scientific discovery and innovation.

Major topic areas covered during the review included physical mathematics and applied analysis, plasma aerodynamics and magneto hydrodynamics, boundary layer physics, numerical methods, flow control, turbo machinery flows, cooperative control, shear layer flows, and control for space systems.

The featured speakers included Dan Marren, director, Arnold Engineering Development Center, White Oak, Md.; Dr. Jaiwon Shin, deputy associate administrator for NASA's Aeronautics Research Mission Directorate; and Dr. Richard M. Murray, director, information science and technology, California Institute of Technology. Each speaker offered perspectives on the future needs of the Air Force and challenged the research community with taking the Air Force successfully into the next century with new designs and innovations.

In another AFOSR-funded project, a team at the University of Iowa has been developing numerical methods and a computer code focused on high-speed munitions impact. This research could have important applications in the areas of target penetration, hazard prevention and collateral damage control.

Program managers who led the review on behalf of the AFOSR Aerospace and Materials Sciences Directorate are Dr. Schmisseur, boundary layers and hypersonics portfolio, and Lt. Col. Rhett W. Jefferies, turbulence and rotating flows portfolio. Program managers who led the review from the AFOSR Mathematics and Information Sciences Directorate are Fariba Fahroo, computational mathematics portfolio; Arje Nachman, physical mathematics and applied analysis portfolio; and Lt. Col. Sharon A. Heise, dynamics and control portfolio.

The AFOSR aerospace and materials sciences directorate is responsible for research activities in aerospace, engineering and materials. At present, its program mangers oversee more than 350 basic research projects. The four major projects in the directorate are solid mechanics and structures, structural materials, fluid dynamics and propulsion.

Program managers in the mathematics and information sciences directorate manage an estimated 300 basic research projects with focus on mathematical, information and computer sciences. Many critical research activities are multidisciplinary and involve support from the other scientific directorates within AFOSR. Such activities include both joint research in the design of high-power microwave devices and in human-machine interaction and information fusion. **@**